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Shelf-Slope Physical/Biological Response to Monsoonal Wind Forcing and Riverine Inflow - 4D Sampling with Towed Profilers and Autonomous Gliders Off Vietnam

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LONG-TERM GOALS

To develop improved predictive capabilities for the distribution of particulate and dissolved materials in the open and the coastal ocean.

OBJECTIVES

To study the dynamics of absorbing and scattering materials in the South China Sea and its response to physical forcings, namely the monsoon, river inputs and topography.

Link in-situ measurements with remote sensing to be able to constrain parameter values and processes using remote observations.

APPROACH

We propose an observational program using ship-based towed profiling, long-endurance gliders and floats focused on:

1. Processes that govern circulation and biological variability over the shelf and slope, including the interplay between monsoonal wind forcing, freshwater input and topography.
2. Mechanisms that drive cross-slope exchange and communication between the Vietnam shelf and interior South China Sea.
3. The potential use of remotely sensed ocean color for characterizing circulation over the shelf and slope.

WORK COMPLETED

We have purchased two profiling floats through a DURIP (see below) that will be deployed as part of the observational program. We have completed no other work to date as we are waiting for the plans of the observational program to be finalized.

IMPACT/APPLICATIONS

This project will provide data necessary to understand how physical forcing, particularly that assoicated with the monsoon, affects the distribution of particulate and dissolved materials in the South China Sea. Understading those dynamics are necessary to devise models able to predict the fate of such materials.

RELATED PROJECTS

As mentioned above profiling floats purchased through a DURIP grant (N000141010776) will be used as part of this project.

This work is in collaboration with Drs. Craig Lee and Burt Jones who are funded under the same DRI.